

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

1.-12. (Cancelled)

13. (Currently Amended) A titanium metal implant comprising a metal substrate for use in a surgical procedure, said implant having a surface layer integral with said metal substrate and incorporating a biocidal metal material, said implant comprising as said surface layer an anodized hard layer ~~as said surface layer~~ and including pits in said ~~surface~~hard layer, ~~said hard layer and said pits including ions of said biocidal metal material as a result of ion exchange~~, said pits including a softer and more porous material than said ~~the~~ hard layer, said hard layer and said pits including ions of said biocidal metal material as a result of ion exchange, with said more porous material in the pits having absorbed biocidal metal material to a larger extent than said hard layer~~with said hard layer having absorbed less biocidal metal material than the more porous material in said pits~~.

14. (Currently Amended) A titanium metal implant according to claim 13, wherein titanium is present in said substrate implant at at least 75% by weight.

15. (Currently Amended) A titanium metal implant according to claim 14, wherein said~~the~~ titanium is present as pure titanium or as a titanium alloy.

16. (Cancelled)

17. (Currently Amended) A titanium metal implant according to claim 13, wherein an oxide or phosphate oxide-matrix is present at said surface layer of said metal substrate, and wherein biocidal metal ions are absorbed into the oxide or phosphate matrix.

18. (Cancelled)

19. (Currently Amended) A titanium metal implant according to claim 1718, wherein saidthe biocidal metal material ions are selected from the group consisting of: silver, gold, platinum, ruthenium and palladium.

20. (Currently Amended) A titanium metal implant according to claim 13, wherein saidthe hard layer is 0.14 micrometers thick.

21. (Currently Amended) A titanium metal implant according to claim 20, wherein thesaid hard layer includes pits having a diameter of approximately 5 micrometers and depth of approximately 0.4 micrometers.

22. (Currently Amended) A titanium metal implant according to claim 2413, wherein saidthe pits make up between 15 and 20% of the surface area of thesaid surface layer.

23. (Currently Amended) A titanium metal implant according to claim 13, wherein thesaid pits extend through said surface layer into said metal of said implant.

24. (Currently Amended) A method of treating a titanium metal implant comprised of a metal substrate for use in a surgical procedure, said method including the steps of forming a surface layer integral with said metal substrate, anodising saidthe implant for forming a surface layer integral with said metal substratethereon, rinsing the anodised implant, and then performing ion exchange so as to for incorporateing ions of a biocidal metal into thesaid surface layer, characterised in that said method comprises anodising saidthe implant at a voltage above 50 volts for a period of at least 30 minutes, so as to for generateing thesaid surface layer, wherein the current density, the electrolyte concentration, the duration of anodising and the magnitude of the anodising voltage generates a dense hard surface layer and also shallow pits in saidthe surface layer wherein said pits which are filled with a somewhat softer and more porous material.

25. (Currently Amended) A method as claimed in claim 24, wherein said biocidal metal is silver.

26. (Cancelled)

27. (Currently Amended) A method as claimed in claim 245 wherein saidthe anodising step uses an electrolyte comprising phosphoric acid.

28. (Currently Amended) A method as claimed in claim 276 wherein thesaid phosphoric acid is of concentration between 5% and 20% by weight.

29. (Currently Amended) A method as claimed in claim 24 wherein thesaid electrolyte comprises chloride ions at a concentration no more than 500 ppm.

30. (Cancelled)

31. (New) A titanium metal implant according to claim 19, wherein other elements are present in said surface layer, selected from the group consisting of: copper, tin, antimony, lead, bismuth and zinc.

32. (New) A method as claimed in claim 24, wherein the pits make up between 15 and 20% of the surface area of the surface layer.

33. (New) A method as claimed in claim 32, wherein the pits extend through said surface layer into said metal of said implant.